

The South Australian NATURALIST

A Quarterly Journal of Natural History
published by
THE FIELD NATURALISTS' SECTION
of the
ROYAL SOCIETY OF SOUTH AUSTRALIA (INC.)

* * *

Hon. Editor - - - NOEL LOTHIAN
Club founded 1883 — S.A. Naturalist 1919
The author is responsible for the facts recorded.

* * *

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FIELD NATURALISTS' SECTION OF THE ROYAL SOCIETY OF SOUTH AUSTRALIA (Inc.)

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GENERAL INFORMATION

No special knowledge necessary to become a member, only a keen interest in natural history and a willingness to further the aims of the Section.

This Section was founded in 1883 for the purpose of affording observers and lovers of natural history regular and frequent opportunities for discussing those special subjects in which they are mutually interested; for the exhibiting of specimens; and for promoting observations in the field by means of excursions to various collecting grounds in and around the metropolitan area.

The Monthly Meetings of the Section for lectures, reading of papers, and exhibition of specimens are held on the third Tuesday, at 8 p.m. at the Royal Society's Rooms, Institute Buildings, North Terrace, Adelaide.

Visitors are welcome

Subscriptions—

Life Membership £7/7/-

Ordinary Members .. 10/- per annum

Student Members

18—21 years 5/- per annum

Junior Members

under 18 years .. 2/6 per annum

Corresponding Mem-

bers 5/- per annum

Excursions—

For excursions by train meet on train after obtaining ticket.

For excursions by tram meet at T. & G. corner.

Bus Trips (unless otherwise stated) leave from the corner of Kintore Avenue and North Terrace; at 8.30 a.m. for all day trips, and 1 p.m. for afternoon trips. Persons desiring to attend should contact the Treasurer, Miss G. L. Gregor, at the School of Mines (W1771) at least seven days ahead.

Members can take receptacles for the carrying of specimens, for at each outing members may desire to make collection of items for further study.

Committee Meetings are held on the second Tuesday of each month.

Postal address of the Section—

Box M 1594, G.P.O., Adelaide;

or—

C/o Royal Society's Rooms, Institute Building, North Terrace Adelaide.

"The South Australian Naturalist" —

The Journal of the Section. Free to members. Exchanges may be arranged. Extra copies 3/- each. Address communications to Hon. Editor, T. R. N. Lothian, c/o. Botanic Garden, Adelaide.

PROCEEDINGS

MARCH MEETING

The Flora of Western Australia differs widely from that of the Eastern States inasmuch that it is a remnant of a flora that existed ages ago, when Australia was divided in a north and south direction by an inland sea. Western Australia was then a portion of another continent now disappeared. This was pointed out by Mr. Lothian on the evening of 17th March, when he showed that the central and now dry portions of our Continent, prevented further intermingling of plant types. So we have in Australia two distinct groups of flora, that of Western Australia, which gives the Australian element, while the group found in the mountainous east coast area of Australia, is related to types in the India-Malayan area. Mr. Lothian with coloured slides, gave his talk concerning the eastern group, which on account of its habitat in the mountain area, enjoyed high rainfall not experienced elsewhere in Australia.

The following were elected as ordinary members:—Mrs. L. E. Horder, Stirling East; Miss Joan Smith, 9 Lorraine Ave., Mitcham; and Mr. B. Finch, 29 French t., Galway Estate. The Chairman extended a very warm welcome to these new members.

The financial statement was presented by the Treasurer as follows:—

	£	s.	d.
General Account	249	10	1
Colour Plate Fund	11	11	2
Conservation Fund	41	15	7
Life Membership	83	19	2

General business included a report by the Editor on the next issue of the "S.A. Naturalist," and Arbour Day to be held at National Park on 2nd May.

The meeting closed approximately 0 p.m. A.C.M.

APRIL MEETING

On April 21 the Chairman and 13 members listened to Mr. J. Windle and saw some more of his excellent coloured slides. Taking for his subject "Landscape in Colour" members and their friends heard how these photos had been taken and learnt more about the many pitfalls which be-

set the would-be-photographer who endeavours to "take" the perfect "shot." All present enjoyed the lecture and showed their appreciation to Mr. Windle, for the time and trouble he had taken over the preparation and selection of his slides.

The meeting decided to support the nomination of Mr. Charles Barrett, Melbourne, for the 1953 Natural History Medallion.

The chairman extended a warm welcome to the following newly elected members:—

Mrs. L. E. Horder, Stirling East.
Miss J. Smith, 9 Lorraine Ave., Mitcham.

Mr. B. Finch, 29 French street, Galway Estate.

The meeting was closed at 10 p.m.

SPECIAL MEETING

Prior to the General Meeting the special meeting called for, was held at 7.30 p.m. on 21st April to discuss and approve of the new Rules and By-laws. The Chairman stated that the parent body had requested the insertion into the Rules of a clause disallowing any alterations to them or the By-laws until the Council of the Royal Society had approved of them. Further an additional Rule and By-law governing the affiliation of any organisation with the Section. The meeting approved of both these additional clauses. The Chairman announced that the revised Rules and By-laws would be printed in the forthcoming issue of the S.A. Naturalist and closed the meeting at 7.55 p.m.

MAY MEETING

On 19th May the Section held its general monthly meeting when over 40 members and friends attended. Also present were representatives of the South Australian Ornithological Association and of the Royal Society of South Australia. The Chairman welcomed members from other organisations and especially two members of the Arrarat Field Naturalist Club, Misses Banfield and Mitchell.

The important business of the evening was the presentation to Professor J. B. Cleland of the 1952 award of the Australian Natural History Medallion. The Chairman in presenting the award, mentioned the long association Professor Cleland has had with the Section, the wide-spread interests and knowledge which he has always made available to any who sought information, and the other awards which had been given to him, culminating in the award of the O.B.E. by the late King George VI.

In reply Professor Cleland thanked members of the various organisations present for forwarding his name to the Committee. In his remarks he mentioned attending an excursion to Oakbank over 60 years ago, and other incidents connected with the early history of the Section. It was in 1896-97 when it was necessary for the Adelaide medical students to go either to Sydney or Melbourne to do their training, that natural history commenced to play a big part in Professor Cleland's life. Dr. Pulleine mentioned to the Professor that "the birds were more interesting in and around Sydney."

The Professor told us of making a collection of birds in the heavy scrub around Rose Bay, the association between natural history and the plague in Sydney, of leprosy and house burning, and of the mysterious "X" disease which occurred in 1919 and 1924 and was identified in the late 1940's as encephalitis.

The Chairman then asked Professor Cleland to give his lecture for the evening on Fungi. As was expected, Professor Cleland gave us a most interesting account, first touching on the scientific side, then the gastronomic and finally on the general side of his subject. He warned all from attempting experiments in eating other than the common mushroom, but if experiments were to be made, make certain that a portion of the "fungus" was left uncooked so that "in the case of a catastrophe those left would have a chance to identify the species concerned!" He further drew attention to the danger of the Flyagaric, a scarlet-topped white-dotted species which is now extremely common through the Mt. Lofty Ranges, but normally associated with introduced trees. Because of its brilliant colouring Professor Cleland thought that at same stage a youngster may eat it; it is extremely poisonous and there is no known remedy. At the conclusion of Professor Cleland's talk he was thanked by the Chairman, and members showed their appreciation.

The Chairman, on behalf of all members, presented Mr. Lothian with Stan Kelly's "Forty Eucalypts in Colour" as a token of their appreciation for his assistance in

the Wild Flower Shows. Mr. Lothian thanked the Chairman and members for this wonderful gift and expressed surprise that he should have been singled out, for the success of Wild Flower Shows has been due entirely to team work. He hoped that this year's Show would be equally successful.

The following members were elected as ordinary members, and welcomed:—

Mr. D. Krachenbuehl, 23 Angus st., Goodwood Park.

Mr. P. G. Palfrey, Harrow Ave., St. Marys.

Mrs. M. G. Smith, 26 Dwyer Rd., Oaklands Park.

Miss G. D. Glasscoe, "Huntleigh," Daisy Ave., Ascot Park.

Miss E. W. Wardlow, 71 First St., Prospect.

A letter was read from the Preservation Section of the Forests Products Division, C.S.I.R.O., Melbourne, seeking specimens of wood destroying fungi. Members are asked to forward such specimens direct, and in return officers of the Section will name the specimens to enable members to build

up a collection themselves. Postage will be refunded if required.

The Chairman mentioned that the Council of the Royal Agricultural and Horticultural Society had suggested that the Section should make an exhibit at the forthcoming Royal Show. The matter was left in the hands of Mr. Lothian.

The Chairman announced that nominations for offices and committee for the year 1953-54 would be called for at the next monthly meeting, and these would be accepted up to 13th July.

To permit members a few minutes to discuss matters of mutual interest amongst themselves, in future the formal business of the evenings would finish at 9.45 p.m. It was particularly appropriate at the present meeting as it permitted members to inspect the large range of exhibits which Professor Cleland had brought along to illustrate his lecture. The Secretary also had managed to obtain one or two extremely interesting examples of "sea life."

The meeting was closed at 10 p.m.

SPECIAL MEETINGS

The American Government has put into effect what is known as the "Fulbright Plan," which provides for the exchange between America and Australia of scholars and leaders in various fields of science.

Dr. Stirton, Professor of Palaeontology in the University of California, has been chosen to do important work in connection with fossil remains which are to be found in Central Australia.

During his stay in Adelaide, Professor Stirton gave a lecture: "The Phylogeny of the Horse," to a combined meeting of the Royal Society and its Field Naturalist Section. This was held in the Public Library Lecture Room on the evening of 9th March, and approximately 150 persons attended.

The lecturer described a small, flat footed, four toed animal the size of a cat, which lived in the

early Eocene period and which was the ancestor of the horse. Its remains have been found in the clays of England. This creature developed into a larger and more powerful animal, but still kept strictly to type until the Miocene period, when it disappeared. During this period there was intense volcanic upheaval and vast alteration to the earth surface.

When the fossil remains of this creature are found again in a later period it had commenced to develop into diverse types.

The Professor traced these types to those many types extant today.

The whole lecture was excellently illustrated with colour films and the audience showed great appreciation at its conclusion.

Another Fulbright Scholar, Professor H. Creighton of the University of Massachusetts, U.S.A., has come to Australia to do research work at the Waite Research Institute, where she is studying Plant Genetics. She addressed a combined meeting of the Royal Society and the Field Naturalists' Section, held in the Public Library Lecture Room on the evening of 25th March. She chose as her subject "The Plants and Trees of America" and illustrated her address with coloured slides. Specimens were chosen from not only those areas favoured by a heavy rainfall, but from the less favoured desert portions of the Continent, but all were striking in their beauty. The vividness of the trees in their autumn tints were very striking.

The latter part of the programme was devoted to the Wildflowers of Western Australia. Dr. Creighton was most impressed with the

beauties of the native flora and showed a number of slides from the large collection she had made for lecturing purposes in America.

Those present showed their appreciation at the end of the meeting.
—A.C.M.

70th ANNIVERSARY OF THE SECTION

In 1883 the Section was established. In the next issue of the S.A. Naturalist it is proposed to record the happenings (some at least) of the "good old days." The Committee would welcome contributions from any member who has any notes or anecdotes concerning the history of the Section, and so ensure that this issue will be a successful one.

KANGAROO ISLAND FLORA AND FAUNA CLUB

The following is the list of office bearers of the above mentioned Club.

Chairman: Dr. A. W. Burnell.

Secretary-Treasurer: Mr. K. McKenzie.

Committee: Mrs. G. Jackson, Messrs. K. Keane, A. F. C. Lashmar.

A warm welcome to the Club is extended to any member of the Section who visits K.I.

LIBRARY

The Librarian wishes it to be known that the library is open in the evening when the General Monthly Meeting is held, from 7.15 p.m. until 7.50 p.m. It cannot remain open longer otherwise it will interfere with the conduct of the General Meeting.

Hardiness of Australian Plants

In the last issue of "Lasca Leaves"⁽¹⁾ an extremely interesting and pertinent article appears by Vernon T. Stoutemeyer, "Cold Resistance of Subtropical Ornamentals." While dealing with a wide range of garden plants it contains some interesting observations on the hardiness of Australian plants growing under Californian conditions.

These observations were recorded during the winters of 1947-48, 1948-49, 1949-50, in the vicinity of West Los Angeles. Temperatures ranged from above freezing point to the lowest, which was 24°F. during the 1947-48 winter (20-21°F. in low lying areas), whilst in 1949-50 winter the freeze occurred in early December following a period of warm weather with rain in November. Under these conditions growth had commenced, therefore damage was severe.

The following details are taken from the above mentioned paper.

Eucalyptus.—Most of the *Eucalyptus* species commonly grown were not seriously affected by temperatures down to 20°F. *Eucalyptus ficifolia* lost much wood of the tops at this minimum in January 1949, but recovered well. *E. cladocalyx* (*E. corynocalyx*) was observed to be frosted noticeably at this temperature. Some injuries were observed on *E. citriodora*, *E. Lehmanni* and *E. cinerea*, although *E. cinerea* was untouched below 20°F.

Acacias.—Except in the colder areas, all species of *Acacias* kept blooming or were undamaged during and following the January 3-4 freeze of 1949. Recorded damage only on *A. podalyriaefolia* at approximately 20°F.

Ferns.—These were in an unheated lath-house where the temperature fell to 20°F. The damage would have been considerably greater had the plants been in the open.

Ferns showing severe injury or killed at 20°F. were *Alsophila australis* and *Cyathea medullaris*. Those showing slight injury were *Platycerium alcicorne* and *Platycerium grande* while those showing no injury were *Adiantum altadena*, *Dicksonia antarctica* and *Pteris tremula*.

Vines.—Most of the evergreen and flowering vines were severely damaged or killed at temperatures between 30°F. to 20°F.

Hardenbergia comptoniana no injury at 25°F.

Hibbertia volubilis slight injury at 26°F.

Pandorea pandorana no injury at 21°F.

Sollya heterophylla no injury at 21°F.

Shrubs.—Observations indicate a particularly adverse influence of frost accompanied by low dewpoints on tender subtropical and tropical plants. However, this may be a relatively unimportant factor with plants in other groups such as many of the Californian native plants or Mediterranean plants, particularly those having sclerophyllous or grey-tomentose foliage. This is an unworked field for ecological study. The use of controlled laboratory techniques would present considerable mechanical difficulties.

The following Australian shrubs are reported upon:—

Chamaelaucium uncinatum no injury at 21°F.

Chorizema varium no injury at 24°F.

Correa alba no injury at 21°F.

Correa speciosa lowest temperature resisted 18°F.

Grevillea Banksii lowest temperature resisted 20°F.

Kunzea sericea no injury at 25°F.

Leptospermum laevigatum no injury at 21°F.

Leptospermum scoparium no injury at 21°F.

The recovery of many plants injured by the 1948-49 freeze was often slow. In some instances, new growth did not appear until late in the following summer. The best recovery was made when plants were left unpruned and unfertilized with minimum irrigation until new growth was well started.

Freezing weather early in the autumn may be much more serious than the same temperatures would be later in the season.

Materials recently planted in the ground or shifted to larger containers were especially vulnerable. All through the two most severe winters, losses of nursery plants were large, but although

(1) Lasca Leaves—Quarterly journal of the Los Angeles State and Country Arboretum, Vol. II, No. 3 (July, '52).

well established ornamental plantings were damaged severely, most plants eventually recovered.

Active shoot growth should be restrained as much as possible during the winter. This can be aided by withholding fertilizer and water in the autumn. However, in California, which has a typical Mediterranean climate, the autumn and winter rains when accompanied by periods of warm weather may start growth in spite of such precautions. Some colder regions with dry winters are known to be safer for certain plants than California. On the other hand, when freezing weather comes, it is sometimes advantageous to have moist soil since this accumulates more heat.

Many striking instances of the influence of ground radiation were observed in West Los Angeles during the freezes of 1947-48 and 1948-49. Since low temperatures in southern California are usually of short duration, ground radiation of heat is frequently an important factor in mitigating the effects of low air temperatures. After prolonged low temperatures this reserve may become depleted, however.

On the night of January 3-4, 1949 (temp. 20°F.), plants under eaves usually fared better than those fully exposed. In the West Los Angeles area, plants under overhanging eaves of houses or under trees often escaped serious injury only a short distance from locations where fully exposed plants were killed to the ground.

Plants against masonry walls or stones were often much less injured than those against wooden walls. Although drying out of the soil is used as a means of conditioning plants against cold, the soil should be moist rather than dry in advance of the freeze, as the moist soil will store more heat.

Trees.—The following records are of interest:—

Agonis flexuosa severe injury 21°F.
Brachychiton acerifolium slight injury 25°F.
Brachychiton populneus no injury 21°F.
Callistemon speciosus no injury 21°F.
Castanospermum australe no injury 25°F. and lower.
Eugenia paniculata australis slight injury 24°F.
Grevillea robusta no injury 21°F.
Hymenosporum flavum no injury 21°F.
Lagunaria Pattersonii no injury 21°F.
Pittosporum rhombifolium slight injury 26°F.
Pittosporum undulatum severe injury 21°F.
Stenocarpus sinuatus no injury 25°F.

Some general recommendations are made at the end of this article. They are:—

The following species should *not* be planted when cold temperatures are likely to be prolonged during the winter (or in low lying areas). *Eucalyptus citriodora*, *E. ficifolia*, *E. Lehmannii*, *Eugenia paniculata*, *Melaleuca leucadendron*, *Pittosporum undulatum*, *Tristania conferta* and *Harpullia pendula*.

Some trees likely to be destroyed when temperatures drop to 20°F. are *Cupania anacardioides* and *Hymenosporum flavum*.

Some trees which appear to be entirely safe at temperatures below 20°F. are *Callistemon*, *Casuarina*, *Grevillea robusta*, *Hakea saligna*, *Lagunaria Pattersonii*, *Melaleuca genistifolia* and *Pittosporum phylliraeoides*.

EDITOR'S NOTE

It would appear that this important field is untouched, for papers of a similar nature have not been noted in any Australian journals. Further observations would be welcomed and members are asked to forward them to the Editor, giving details regarding species, degrees of cold endured and conditions prior to the frost.

NATIONAL PARK HANDBOOK

Advice has been received from the Commissioners of National Park that a new edition, completely re-written of the Handbook has been prepared. It is expected

that this will be available in August or September, and the cost will be 5/- per copy. Members wishing to secure copies should apply either to Secretary, National Park, Belair, or the Secretary of the Section.

Australites and Other Tektites

by *Charles Fenner*, S.A. Muscum.

Research Associate of the Institute of Meteorites, University of New Mexico.

The name "Tektite" was given by the late Franz E. Suess, of Vienna, to blobs of natural melted glass, variously shaped, found on the surface of the earth or in alluvial deposits. The word simply means "melted" and was wisely chosen, since that is a definite characteristic common to all tektites. These small objects constitute one of Nature's puzzles.

Scientific enquirers over more than 150 years have been unable to agree as to the exact nature of their origin. Not that there has been any lack of skilled enquirers, nor of theories. For instance, in 1940, Virgil E. Barnes, of Texas, published a list of references to scientific publications about tektites, and even at that date the list included 285 different papers.

The earliest recorded tektites, and possibly the oldest geologically, were those found in Moldavia, called Moldavites. Beyer (Manila) considers that the Rizalites, etc., of the Philippine Islands fell in the Mesolithic to Neolithic periods 8000 B.C. to 2000 B.C.

It may be asked why similar objects have not been found in the older rocks of the earth. Since they fell in late Tertiary and in Recent times, one would expect that similar objects would have fallen on the earth in earlier periods. Perhaps they have fallen, and been missed by geologists. Another theory is that they have become devitrified and thus unrecognizable.

The earliest recorded Australite was found in Western New South Wales, and was given by the explorer, Major Mitchell, to Charles Darwin, when that great scientist visited Sydney. Darwin figured and described it in his "Geological Observations," 1844. Darwin thought it to be of volcanic origin, but that theory has been discarded.

Tektite swarms have been found in Moldavia, Billiton, Australia, Tasmania, Ivory Coast (Africa), Indo-China, Java, Philippine Islands, Borneo, Libyan Desert, Colombia (South America), Texas (North America) and other places. The material called Darwin Glass and that called Libyan Glass are somewhat different, both in composition and appearance, from that of the other groups, but their origin is even more mysterious; perhaps we should not class these two groups as tektites until we know more about them.

Moldavites have been found in thousands and may be seen in large numbers at Prague; they are of a beautiful translucent green or brown colour. Apart from Libyan glass and Darwin glass, most tektites when broken look like black bottle-glass. Libyan glass is in larger masses and yellowish. Darwin glass is of frothy irregular character, light in colour. Indochinites are very numerous, as may be seen in museums. Philippinites and Javanites are also very abundant. It has been estimated that

from one million to ten million Australites were strewn across the southern half of Australia and Tasmania.

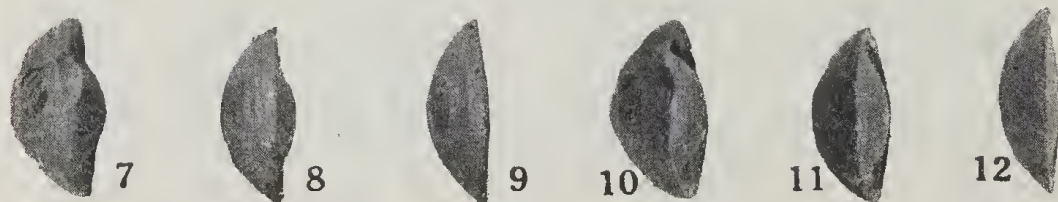
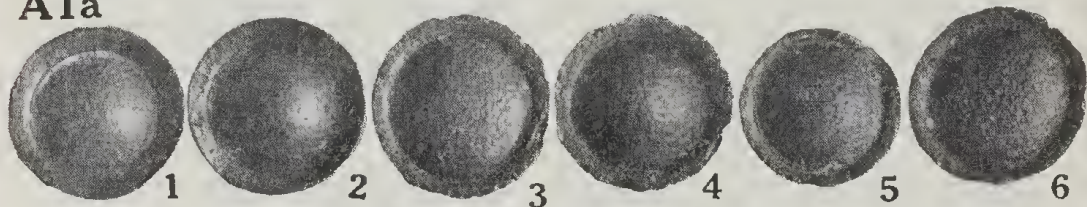
Each group has a characteristic different shape or series of shapes, also a different chemical composition, mostly silica, but the members of any one group have closely related types of shape and peculiarities of chemical composition. So much so, that with practice one may usually identify the group to which any individual specimen belongs. Nevertheless, it must be remembered that the tektites of south-eastern Asia and those of the Philippine and East Indian islands have much in common. Otley Beyer (Manila) suggests the name Indo-Malaysianites, to include the Indio-Chinites, Billitonites, Rizalites, Javanites, etc.

Theories regarding their origin vary greatly, for instance:

- (a) relics of a primitive glass factory,
- (b) volcanic bombs or bubbles,
- (c) obsidian pebbles rounded in the gizzards of emus,
- (d) formed by lightning fusing the dust of the air or the rocks of the ground,
- (e) splashes from the impact of meteorites,
- (f) blobs dropped from a flaming meteorite,
- (g) "Chips from the moon," etc.
- (h) swarms of definite glass meteorites,
- (i) blobs thrown out "when the moon left the Pacific Ocean."
- (j) Doubtless, other theories will be forthcoming in the future.

Notwithstanding the variety of theories, they are generally accep-

A1a



A1b

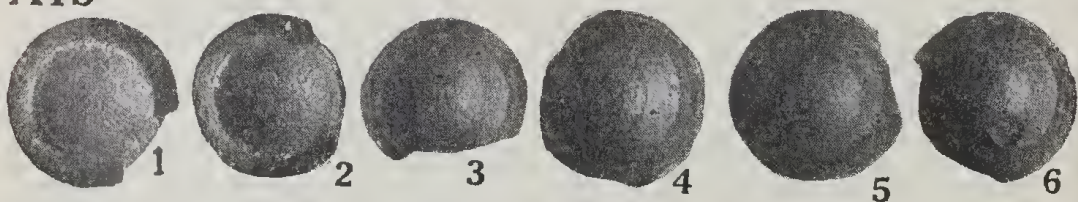


Fig. 1.—Shapes of Australites. Flanged buttons.

ted as glass meteorites, that is, that they come in swarms from a source outside the earth.

This appears to be so for the following reasons:

- (a) The occurrence of each group in a separate restricted locality.
- (b) The general similarity of form types in each group.
- (c) The almost uniform composition of the members of each group.

There are still a few people who do not believe that tektites fell from the sky. But one may recall that as late as 1665 the distinguished scientist, Robert Hooke, did not believe that iron meteorites fell to the earth from outer space! "On one occasion," says Dr. F. A. Paneth, "a whole (French) village, backed by the mayor, sent in a written and signed statement about the fall of a meteorite. The Paris scientists were deeply shocked at their credulity, and simply declared the described facts as 'physically impossible'."

The most striking of the Australites are the "flanged buttons," as shown in Fig. 1. The top row, Nos. 1 to 6, are perfect shapes, like a "pudding in a saucer." The second row, Nos. 7 to 12 shows the same Australites as seen from the side. The third row, Nos. 1 to 6, are buttons from which part of the flange has been chipped off. Nos. 1 and 2 are back side up as in the top row; Nos. 3, 4, 5 and 6 show the front side, with flow ridges. No. 6 shows a small burst gas bubble. As already stated, the flanged button is the rarest form; lenses and lens cores are the most common; broad ovals, narrow

ovals, and dumb-bells, usually abraded, are fairly common. Of over 17,000 specimens in the South Australian Museum collection, there are only 0.6% of flanged buttons.

In 1938 Lincoln La Paz, of New Mexico, recorded that: "Tektites are exhibited occasionally in placer (alluvial) mining camps in the United States. However, it is the author's opinion that such specimens come originally from the tektite-sprinkled goldfields of Australia." There may be some sympathetic magic in this idea, for the flanged button resembles a miner's panning-off dish full of wash-dirt.

Giving special attention to the Australites, we may note that they are all recorded from an area of 2,000,000 square miles of Australia, south of a line joining Kyogle (N.S.W.) and Derby (W.A.). Although they appear to be strewn sporadically — more abundant in some places and less abundant in others—the evidence suggests that they could be found in any closely searched area within the region mentioned.

Maybe they occur in clusters, as suggested by one of Sergeant Kennett's keenest aboriginal collectors, who said: "Supposem you find more big fella stone, alright, you look around properly fella, and you findem mob little fella."

The general composition of Australites is as follows: SiO_2 68 to 79%; Al_2O_3 , 10 to 15%; Fe_2O_3 , 0.4 to 0.8%; FeO , 3.11 to 4.3%; MgO , 1.3 to 2.5%; CaO , 1.4 to 3.5%; Na_2O , 0.9 to 1.5%; K_2O , 1.2 to 2.5% with traces of Manganese, Titanium, etc. Other groups are somewhat similar, but with detectable differences and with some

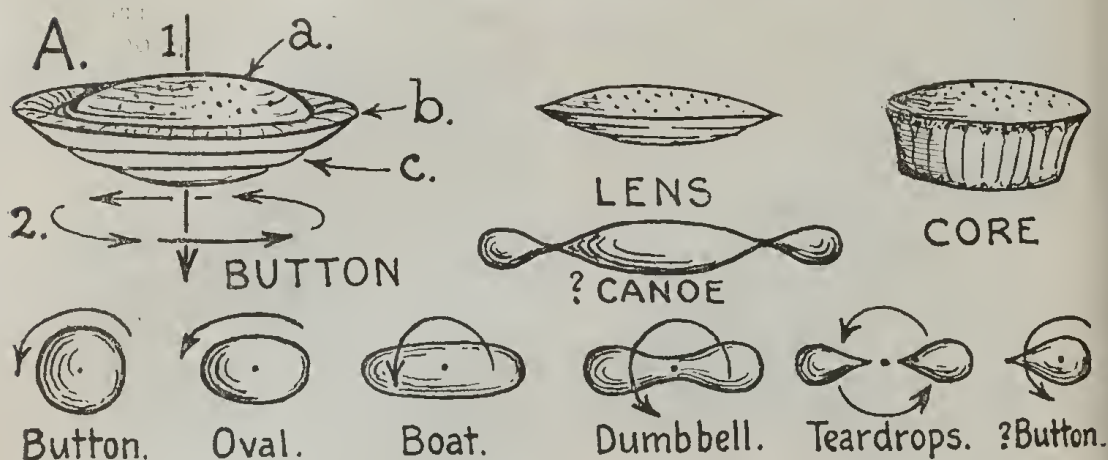


Fig. 2.—Most common shapes of Australites.

overlap. Libyan Glass and Darwin Glass are much more siliceous, varying up to 89% SiO_2 for the latter and 97% SiO_2 for the former.

In Figure 2 an effort has been made to suggest the development of the commonest forms of Australites. The lens and the lens core are by far the most abundant, the "flanged button" is the most rare and most beautiful, and there are many aberrant forms, few in numbers, such as ladles, helmets, flat discs, pine seeds, etc. A large number are broken and nondescript fragments.

It was for some time the writer's opinion, following Suess, Michel, and others, that Australites commenced as spheres or blobs of glass, shed in a vast shower from a flaming light-metal or stony meteorite, or swarm of meteorites, passing right across southern Australia, possibly from N-W to S-E. There is evidence that they all reached the earth as cold bodies, at a time "geologically recent but historically remote."

Graphic analysis has shown that the largest round forms were cores,

sometimes called "bungs"; the next largest were medium to small cores; the next largest the flanged buttons, and the smallest the more perfect lenses. While a great number still preserve their original perfect form, the majority have flaked as well as eroded by sand-blast in semi-arid areas, or by alluvial wear in the moister areas.

They are found on all types of surfaces, irrespective of the kind of rock, the amount of rainfall, etc., and all appear to have spun in their flight, rotating rapidly in a plane at right angles to their direction of movement. Unbroken and unabraded specimens usually show pitting or other marks on the rear surface and concentric or spiral flow ridges on the front surface where that surface has not been flaked away.

The Australian aborigines were the first to find Australites, and used them at times to make small cutting and scraping implements, or as objects of magic, medicine, and mystery. They were given different names by different tribes; a collection in the British Museum is recorded as being called *map-*

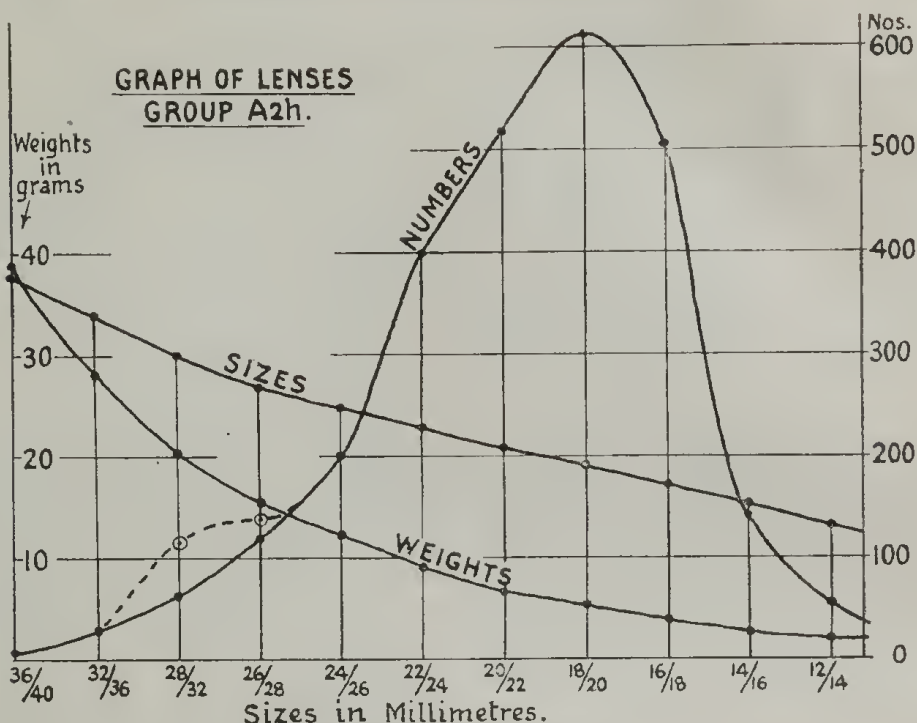


Fig. 3.—Graph of numbers, diameters in millimetres, and weight in grams several thousand lenses (class A2h), including lens cores, from the John Kennett collection.

pain. Tindale states that the Dieri tribe called them *ooga* and *mura-mura*, meaning "eyes that stared hard at you," while the Wadikali tribe called them *mindjimindjilpara*, with something of the same meaning.

This graph (Fig. 3) is included in support of the writer's theory of the genesis of Australite forms. The group (A2h, lenses and lens cores) is the largest in the South Australian Museum collection. The series was firstly arranged according to weights, from the 8 that averaged 39 grams, then to the maximum number of 613 averaging 5.3 grams, down to the minimum of the 54 smallest specimens, averaging 2 grams.

The graph of weights is a gently curved line. That of sizes in milli-

metres is an almost straight line. The significant fact is that the line showing the numbers of each weight-size group is a normal distribution curve, as found in the graphs of varying factors in most natural objects. The largest known specimen is 218 grams, and the smallest .15 grams.

Assuming that they all started as spherical or oval forms, still hot, spinning as shown in Figure 2A, the forward part may have been further melted by the friction of the air, flowing backward to form a flange. All Australites show evidence of two distinct periods of melting.

Where the flange was developed, it later, in most cases, melted and disappeared, and thus we get the lens, the commonest form. The

smallest lens is one-sixth of a gram, but there may be smaller ones too difficult to find. In the larger lenses the rim was often fractured off, being brittle because of its rapid cooling in the lower atmosphere, and thus we get the lens "core," second commonest in form. The largest are "bung-shaped," and in rare cases are over 200 grams.

It is thought that the oval or elongate types may have grown longer as they spun, sometimes becoming dumb-bell or pear-shaped types; in some cases perhaps these finally flew into two pieces forming "tear-drops." Some elongate forms developed flanges, and even in rare cases this was so with tear drops.

Since, as Suess has emphasized, and the present writer has shown by a detailed analysis of several large collections of form types, the Australites are confined to a "rather small number of well-defined types of shapes" (Suess), apparently developed by their flight in semi-liquid form through a gas, and since also their distribution, their internal and external structures, chemical composition, and refractive indices, are well known, it would appear that the next appropriate step in the enquiry as to their origin should be a mathematical analysis of their shapes, as indicated by the writer in *Australites*, Part III, pp. 197-206, etc. (Trans. Roy. Soc. S.A., vol. 62 (2), 1938.)

Many contain gas bubbles, often minute, and mostly burst. One specimen (Melbourne Museum) is a large hollow sphere, about $1\frac{1}{2}$ inches in diameter. The interior was originally occupied by a gas.

When this specimen was cut in two the gas was not collected, but workers on other specimens have asserted that the gas is mostly carbon dioxide and carbon monoxide. The specific gravity is fairly constant, but on its variations Baker considers they all fell in one swarm, moving from NW to SE. Large numbers must have fallen into the adjacent seas.

In June, 1939, the writer prepared an article on Australites, entitled "Blackfellows Buttons." This appeared in "The Sky," New York, and concluded with the following paragraph: "Tektites have now been reported from Europe, Asia, Africa, Australia and South America. It can scarcely be doubted that one or more showers await discovery in North America." In June, 1940, Virgil Barnes published his first paper on North American tektites (Bediasites, Texas). Probably there are more swarms yet to be discovered.

With all that we know of Australites, and of other tektites, no positive proof is available as to their origin, except that they are glassy, were molten, and that they came from outside the earth. Naturalists, keeping in mind the known facts, can therefore theorize about them to their heart's content. As was said long ago of the fly in the amber:

"The wonder is not why nor
where,
But how the deuce the thing
got there."

The facts and theories in this paper are based on forty years' study of australites and other tektites, including the weighing, measuring, and classification of many thousands of these objects,

together with microscopic observation of thin sections. The writer has also discussed the matter with authorities, either personally or by correspondence, in all the Australian States, as well as in North America, Europe, Asia and Africa.

I beg to acknowledge assistance either by personal conversations and exchange of papers and specimens, or in other cases by extended correspondence and exchange of papers and specimens with the following authorities: L. J. Spencer and Campbell-Smith (London), Leonard (California), La Paz and Cassidy (New Mexico), Paneth (Durham), Barnes (Texas for Bediasites), Nininger (Arizona), Oleszkowicz (Michigan), Douglas Johnson and Clyde Fisher (New York), Lacroix (Paris, for Indochinites), von Koenigswald (Java, for Javanites), Shelton (Malay, for Billitonites), F. E. Suess and Michel (Vienna), Otley Beyer (Manila, P.I., for Rizalites), Young (Cape Town), also Summers, Kerr Grant, Skeats, Dunn, Glauert, Whitehouse, Scott, David, Geo. Baker, Walkom, Mahony, and others (Australia). Some of these workers have passed on, and some may have been overlooked, but I am grateful to them all. My special thanks for inspiration are due to Dr. Summers, and Franz Ed. Suess, and Fritz Paneth.

F. A. Paneth, in "Endeavour", January, 1953, gives accounts of the detection and quantitative analysis of rare gases contained in iron and stone meteorites. He has elsewhere dealt similarly with glass meteorites (tektites). Paneth and his fellow workers reach some astonishing conclusions, namely, that some iron meteorites solidified less than 1,000,000 years ago. The age of the earth is generally taken

as 2,000,000,000 years, and the age of the solar system as about 3,000,000,000 years. Several other meteorites gave ages of 7,000,000,000 years, "several times the supposed age of the earth and very close to the supposed age of the Universe."

Hoyle (Cambridge) says the Galaxy "cannot yet be as old as 50,000,000,000 years." (Hoyle is a keen astronomer).

Harrison Brown (Chicago and California) has recorded that "in meteorites scientists possess a Rosetta Stone that may well prove to be a major key in answering some of the problems of the solar system, and perhaps of the universe itself." This would not exclude the glass meteorites (tektites) though Brown does not specifically mention them.

Professor George Gamow of the George Washington Museum—a brilliant astronomer—says "Astronomical evidence clearly indicates that the multitude of stars we see in the sky—our own Sun among them—could not have existed eternally and were probably formed earlier than some 2,000,000,000 years ago from the hot primordial gas that previously filled all the universe." It is not possible to discuss glass meteorites (tektites) without wandering into the realms of astronomy—hence these astronomical references.

It is clear that the study of australites and other tektites leads us deep into human knowledge. The writer's belief is that tektite swarms rate equally with iron and stone meteorites, and should be thus classified in collections of meteorites, and in publications concerning meteorites.

THE OCCURRENCE OF ARGEMONE MEXICANA VAR OCHROLEUCA IN SOUTH AUSTRALIA

A. R. R. Higginson, Pt. Augusta.

Black's "Flora of South Australia" gives this plant as occurring in 'the country north-west of Cockburn,' but as Cockburn is situated practically on the South Australian-New South Wales border, an element of doubt remains as to whether he intended to convey that the plant did occur in this State.

Some years ago two unknown plants appeared in the writer's garden and were allowed to mature in order to establish their identity. When they flowered there was no difficulty in recognising them as the Mexican or Prickly Poppy — *Argemone mexicana* var *ochroleuca* (Sweet) Lindl and this identification was later confirmed by Professor J. B. Cleland. As this plant is a declared noxious weed in the Eastern States, both plants were then destroyed to prevent seeding, and no further occurrence has been noted.

During the winter of 1951, a fairly extensive colony of these plants was

found growing in the Railway yard at Port Pirie Junction and this was immediately reported to the Department of Agriculture. No action was taken to bring it under the notice of the botany branch of the Royal Society as at that stage it was not known if the plant would persist. The colony was kept under observation during 1952, and it was noted that it flowered and seeded freely and a recent inspection showed that the colony has extended considerably and that the plants are again growing vigorously.

The plants have therefore now been under observation for three seasons and it is evident that it is thoroughly established in this locality and the occurrence should now be recorded.

Field identification of this plant can be readily made by the strip of white which follows the veins of the leaves and by the fact that it exudes a chrome-yellow sap copiously when plucked.

CORYBAS UNGUICULATUS (R. Br.) Reichb.

New Locality Record

Black's Flora 2nd edition 1943 gives Mount Compass and between Mount Gambier and Glencoe as South Australian localities for the above species. It is therefore of considerable interest to record that the writer found this orchid in flower at Bridge-water in July, growing in black gritty soil under small Tea-Tree bushes on the southern slope of a hill lightly timbered with Stringy-

bark. The number of plants in the group found would be at least fifty and it was only after three years observation of the leaves that four plants were found in flower. The grouping of plants suggest vegetative rather than seed reproduction. M. A. Lower.

(Editor's note:—The author of the above note would welcome correspondence with others interested in Orchids. The address is:—7 Playford Street, Glen Osmond, S.A.)

AN INTERESTING MARINE SPIDER, *DESIS KENYONAE* POCOCK FROM SOUTH AUSTRALIA

by H. WOMERSLEY,
South Australian Museum

Spiders of the genus *Desis* are not common. They are to be found on low rocky reefs crawling over the rocks when exposed at low tide.

Closely allied to the European water spider *Argyroneta aquatica*, they have somewhat similar habits, but instead of making an inverted silken bell attached to weeds, they live in the erannies of the rocks which they apparently fill with air, as does *Argyroneta* with her bell, when submerged by the tide. They are quite at home in the water itself.

Recently I have been indebted to Mr. S. E. Rowe for a male specimen of *Desis kenyonae* which he found walking over the rocks on a small island off Pondalowie Bay, Yorke Peninsula, South Australia, on 5th January, 1953.

Although the present account is the first published record of this spider for South Australia, it has been known to me for some years from specimens collected by my son (J. S. Womersley) on the reef at Noarlunga, 25th December, 1935, while in the Museum collection are several specimens from Sellick Beach, March, 1936, collected by Mr. H. M. Hale.

The species was originally collected from San Remo, Westernport Bay, Victoria, by Miss Kenyon.

In his description in the Proc. Zool. Soc. London, 1902, vol. 2.,

p. 102 Pocock quotes from Miss Kenyon the following:

"During a recent stay at San Remo, while turning over stones at low water in search of Mollusca, I noticed what seemed to be the sea-worn shell of a *Crepidula*. Upon detaching the shell from the partially submerged rock to which it adhered, I found underneath it the spider with its legs drawn backwards and its head concealed under a sheet of web which exactly resembled the septum of the valve of a *Crepidula* although the shell itself was that of an *Anomia*. The spider was conspicuous from the intense blue of its abdomen and the vivid red of its cephalothorax. The shell was apparently fixed to the ground by means of a silken attachment, since the shell had to be removed by the insertion of the point of a penknife."

Mr. Pocock (loc. cit.) also gives a key for the separation of the known species only two of which, *marina* Heitor and *kenyonae*, are Australian. Since then a third species *hartmeyer*i was described by Simon from the Michaelson and Hartmeyer Expedition to South West Australia.

The three known Australian species may be separated as follows:

1. Eyes of both anterior and posterior rows very unequally spaced, the distance between medians and laterals far greater than between themselves; protarsus of legs II, III, and IV with a pair of spines on proximal side of

scopula as well as at apex; distal tooth on anterior margin of fang-groove nearer to base of fang and remote from rest of series.

D. kenyonae Pocock.

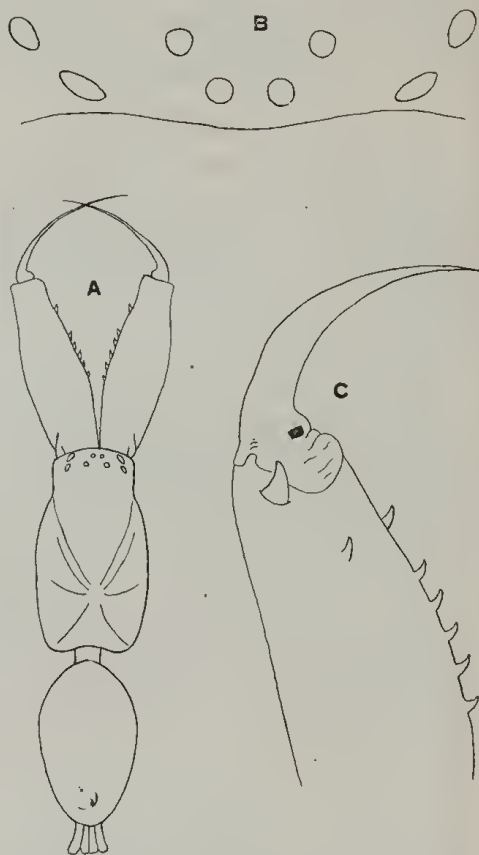
Eyes of posterior row sub-equally spaced.

2. Tibia and protarsus of posterior legs strongly splined. Eyes of posterior row about 3 diameters apart. Teeth of posterior border of fang-groove far apart, separated by a space equal to 3 times length of proximal tooth, the distal tooth much the larger of the two; teeth of anterior row starting well away from base.

D. marina (Hector).

Posterior legs unarmed. Eyes of posterior row equally about 3 diameters apart, medians smaller than laterals. Posterior fang-groove with 2 unequal teeth, apical conical and oblique, the other half the size, straight and acute; anterior margin with 6 acute teeth, basal not near base of fang.

D. hartmeyer Simon.



Text figure.

Desis kenyonae Pocock

- A. Male, in dorsal view, with out legs; B. eyes viewed from front; C. lower side of left mandible (B. and C. after Pocock).

COURSE OF SECOND CREEK

On 8th June, 1952, when the E. & W.S. Department were making excavations along Sidney Place (off Burnside Road and opposite St. David's Church) in the direction and towards Hazelwood Park they unearched large numbers of water worn stones up to 12 inches in size.

These were found at a depth ranging from 2 to 4 ft.

This is evidently the old water course of Second Creek which, at that time, probably made a junction with First Creek in the neighbourhood of Hazelwood Park.

J. B. Cleland.

EXCURSIONS

TRIP TO PORT GAWLER

26.1.53.

Leader: Brian Glover.

The trip was attended by a full bus load of members, and the various habitat types in the area (excluding the mangroves) were searched for birdlife. The day being unpleasantly hot there was little activity amongst the birds, and apart from Singing Honeyeaters (*Meliphaga virescens*), Spiny-cheeked Honeyeaters (*Acanthagenys rufogularis*) and White-browed Babblers (*Pomatostomus superciliosus*) very few birds were seen in the *Melaleuca pubescens* scrub, where an hour or so was spent during the morning. One interesting record in this area was a single Spotted Harrier (*Circus assimilis*), a rare bird this far south.

The afternoon was spent at the lake on the property of Mr. E. A. Brooks. Although the water-level was falling there was not enough mud exposed to attract many wading birds, the only migrants seen being Greenshanks (*Tringa nebularia*) and the Sharp-tailed Sandpipers (*Erolia acuminata*).

The bird-life on the lake itself was rather disappointing. None of the species which had invaded southern South Australia during 1951-52⁽¹⁾ and which were so conspicuous at the Buckland Park lake at that time, was to be seen, and many of the usual residents—Spoonbills, Ibis, Egrets, etc., were also absent.

However most members appeared to enjoy their trip to this area, and those interested in birds seemed to be satisfied with what was seen.

As a point of interest, the leader, with several other bird observers again visited the lake on 8.2.53, this time under perfect weather conditions, but the bird-list was still disappointing.

However, a number of interesting additions were made, including:—Banded Stilt (*Cladorhynchus leucocephalus*)—several small flocks. Avocet (*Recurvirostra novaehollandiae*)—flock of over 100. Black-tailed Godwit (*Limosa limosa*)—3, and several other ducks and migratory waders.

Reference:

(1) Glover, Brian, "Movements of Birds in South Australia." South Australian Ornithologist, Vol. XX, pp. 82-91, 1952.

EASTER CAMP, 1953

The Field Naturalists spent Easter at the Youth Hostel, Aldinga Beach. A smaller party than usual attended the outing but in some ways this was an advantage for it was possible to squeeze most of the party into the utility and travel to more distant places of interest. Unexpected patches of rain on the Friday afternoon restricted our movements but eventually the weather became cool and remained fine for the rest of the camp. Warm weather tends to create a "can't be bothered attitude" especially when you're well fed, and believe me some of these Field Naturalists were fed!

Saturday afternoon we crowded into the utility for a run along the beach northwards to the Fish Tower where a search was made among the sandhills for blackfellows remains. Several kitchens were found with the familiar round fire-blackened stones, and several places where stone chipping had been done when making their stone implements. A blackfellows' burial ground is known to exist about here but no remains were found, probably because they are a little further east than where we were. A windmill near the beach is now the only indication where the blacks used to have a soak of fresh water.

Sunday morning meant church service in the Methodist Church at Aldinga, and in the churchyard is a memorial to the sailors who were drowned in the wreck of the "Star of Greece." In the afternoon we made another trip along the sea-beach to the cliffs on the south side of Sellicks. This was an afternoon out for the shell and seaweed collectors and also for those who were interested in pebbles. Having the utility handy a number of them were brought home and dumped around the camp site "all the same blackfellow".

Monday morning the camp had a preliminary clean up so that in the afternoon we were again able to make a trip—per utility—along the cliffs to Port Willunga, where an inspection was made of the fossils contained in the Miocene limestone cliffs.

In the evening after signing the log-book, camp was left at dusk to catch the Adelaide-bound bus. Here, with a tinge of regret, I once again parted from friends who share a common interest "in the birds, the bees and the wild flowers of nature".

Geo. Hazel.

An Excursion to the Gawler Ranges

by A. R. R. Higginson, Port Augusta

Mr. A. J. Gray, officer-in-Charge of the Victorian State Forestry Commission's nursery at Wail, who is an accepted authority on raising and propagating our native flora and who has done much to encourage the planting of shade and shelter trees in the Victorian Wimmera, had been on a visit to Port Augusta. In consequence every endeavour was made to let him see as much of our district as time would permit.

Mr. Gray had made some profitable trips into the Flinders Range and it was thought that by way of contrast he should also visit the Gawler Range. These are less than 25 miles distant from, and running roughly parallel to the Flinders Range, but carry an entirely different flora, due no doubt to the difference in rainfall. The Gawler Range receiving about 10 inches per year against more than 15 inches for the Flinders Range.

It was mentioned to Mr. Gray that the plants of the area West of the Flinders Range and from a point south of Port Augusta and extending into the interior fell largely within two family groups, namely, the Chenopodiaceae and Leguminosae, the former provide ground cover and the latter most of the arboreal specimens. It was with the intention of checking this rather uncommon occurrence that Mr. A. J. Gray, Mr. Roy Gray of Dept. of Works Arboretum and myself set out along the Whyalla Road on Saturday morning.

While proceeding along the road it was noticed that there

were large numbers of caterpillars crossing the road, all travelling from North to South. One wondered what urge was driving them southward as there did not appear to be any lack of herbage in any direction.

Our first stop was made at a field where it was known that the red flowered Swainsona (*S. stipularis*) usually occurs; we found the plant growing in large numbers but as they had been recently grazed, they did not provide the magnificent sight that they usually do.

The open country between the gulf and the range is the home of that most elusive little bird, the Rufus Field Wren. One seldom sees them as they seldom rise above the top of the blue bush and salt bush which grows here very thickly, but one is always aware of their presence by their twittering call which seems to keep a constant distance and in front.

Our next stop was at a dry watercourse where the usual Red Gum trees (*Eucalyptus camaldulensis*) is replaced by River Box (*E. intertexta*). This is the only place in South Australia from which this tree is recorded and it is an everlasting puzzle as to why this tree should occur in this one creek only. There is no other of its species within 500 miles and it is probably a survivor of a much earlier period.

From this point we diverged from our main route to let Mr. Gray see a large patch of the

Coonamore Daisy (*Erodiohyllum Elderi*) which was in full bloom. This plant would appear to have all the characteristics that are required in a popular garden subject as it has form, colour, perfume, and is easy to raise from seed and keeps well in water. Mr. Gray was very enthusiastic about its possibilities and we had to promise to send him a good supply of seed later before we could get him back to the car.

From here we returned to the Whyalla road and proceeded to a point which was reasonably close to the hills. The car was run off the road and we proceeded on foot.

This part is typical Myall (*Acacia Sowdeni*) country and this tree was growing here at its best and was just beginning to flower. The Myall is not a tall tree, usually growing to about 20 feet, but its dense, spreading branches often cover an area of more than 30 ft. diameter. It mostly attains a rather formal shape and has been given the common name of "Umbrella Tree" which rather aptly describes it. It was noted that plants growing right underneath the Myalls were growing much more vigorously than those growing in the open. This seemed a contradiction as soil moisture is usually considered to be the limiting factor of plant growth in this region. Plants growing underneath densely foliated trees would obviously receive less rainfall than those growing in the open, although the thick mulch of fallen leaves would tend to retain the moisture that did reach the ground. As there had been no shortage of soil moisture in this area for some

months prior to our visit, it was considered that this was not the solution. Nitrogen enrichment was also considered but as this would be expected to be at a maximum in the area of the greatest root activity (which would occur outside the foliage area) this also was discounted. This left only the possibility of increased bacterial activity due to a higher humus content of the soil and as a solution and we left it at that!

Continuing our way we passed rather abruptly from the Myall into a Blackoak (*Casuarina lepidophloia*) clump. A search was made for cones and it was some time before one was found. It was noted that the trees were producing large numbers of root suckers and this fact together with the absence of fruiting cones and also that these trees are usually found in tight clumps led us to the belief that propagation is from these suckers rather than from seed.

Passing out of the Blackoaks we entered onto the foothills of the range. This is open country where the dominant plants are *Kochia* species, *K. sedifolia* and *K. pyramidata* being much in evidence. The breaks in the bluebush are clothed with *Atriplex* and *Bassia* species amongst which *Atriplex vesicarium*, *A. stipulatum*, *A. spongiosum*, *Bassia paradoxa* and some clumps of spear grass—*Stipitida*—were noted.

The *Kochia-Atriplex* plant association continues to the foot of the hills where it gradually gives way to *Triodia irritans* and this plant continues without an appreciable break up to the top of the hills.

The Gawler Range consists largely of shale and rather soft

red sandstone with a horizontal cap of hard igneous rock (Porphyry). It is this caprock (varying in thickness up to about 30 ft.), which gives the range its typical "Tabletop" appearance and is preventing the erosion of the underlying softer rock. Were it not for this layer of rock the Gawler Range would long ago have disappeared. The tops of these hills, which are comparatively flat, vary in width up to 150 yards, carry very little soil, and much to our surprise the only trees of consequence that we saw was *Melaleuca pubescens*, which we had previously found growing in the salt creek on the plain.

On looking back over the route traversed in reaching the hills we

were struck by the clearly defined dividing line between the Myall and Black Oak trees. It was noted that the actual point of division was a small watercourse, the Myalls growing in the strongly alkaline soils to the west of the creek and the Black Oaks in the more acid soils formed by the weathering of the rocks from the hills.

And so we made our way back to the car, not much richer in botanical specimens. Still we had seen much to interest us and to give us thought and to speculate upon for we had satisfied ourselves that the two plant families first mentioned provide at least 90 per cent. of the plants of this area.

OLIVE TREE ON ST. PETER'S CATHEDRAL: ADELAIDE

In "The Advertiser" of 15th March, 1951, is a photograph of a small tree, said to be eight or ten feet high, which could be seen waving over the stone rampart at the pediment of the spire on the south-west tower (the bell-tower). The accompanying legend stated that there "a windblown seed came to rest and sprouted." As the shrub shown in the photograph looked to me rather like an olive, I made an inspection of it with field-glasses a few days later.

It was growing on the northern aspect of the tower and was as ex-

pected an olive. Several domestic pigeons were on the parapet beside it and there was considerable fouling with their excreta. I do not know whether domestic pigeons ever eat olives with stones. I think it almost certain that starlings were responsible for the seeding.

At a similar height on the South-East tower a sowthistle could be seen, and this was unquestionably from wind-blown seed.

J. B. Cleland.

BOOK REVIEW

"*Illustrations of the Fruits (and Buds) of Eucalyptus Species with Alphabetical and Numerical Indices*," Leaflet No. 63. Forestry and Timber Bureau, Commonwealth of Australia, 1952.

The first paragraph of the Foreword reads:—"This leaflet has been produced in the hope that it may assist foresters and botanists in field identification of eucalypt species," but it is doubtful if this would be the case. The illustrations have been taken from Maiden's "A Critical Revision of the Genus Eucalyptus" and each has been brought to life-size. The nomenclature is based on Blakely's "A Key to the Eucalypts" but unfortunately the illustrations are NOT in the natural sequences decided upon by Blakely.

The result is merely a jumble of illustrations not only showing little relationship one with the next one, but

frequently separating the varieties from the parent species which adds to the confusion. Further, proof reading has not been good, for at least five (Nos. 16, 94, 98, 596 and 171) are upside down—the last number, 171, is still upside down although placed as would normally be accepted as the right way up!

Today, when anything published on Eucalypts of a critical and comprehensive nature is of value, it is to be regretted that the present "leaflet" cannot be included in this category.

To make this leaflet workable it is suggested that you follow the lead of a local forester, namely, spend $2\frac{1}{2}$ evenings cutting out the illustrations and rearranging them in numerical order by sticking them on to foolscap sheets. Then and then only, will this leaflet fulfil the hope of the first paragraph.

N.L.

ROADSIDE VEGETATION

The retention of natural vegetation along roadsides adds very considerably to the scenic effect, and it is particularly desirable that such vegetation should be maintained in its integrity along the tourist main roads, as, for instance, towards Victor Harbour. In addition these are some of the last strongholds of native plant and animal life. An additional advantage of retaining the vegetation is that wind erosion is lessened and a certain amount of protection may be given in wind-swept areas to stock in adjacent

fields. The members of the Flora and Fauna Committee were unanimously of the opinion that every effort should be made to retain this natural vegetation and trust that an approach to local Councils may be successful in emphasising the value of this retention.

—J.B.C.

(Two other sites where original native vegetation can still be seen is along railway lines and in country cemeteries. The latter is an invaluable collecting area! Editor).

CULTIVATION OF NATIVE PLANTS!

When going down the street the other day my wife saw a patch of blue on the footpath above the railway station, and on stopping to investigate found it was a fine patch of *Scaevola aemula* growing through at least 3 ins. of compacted limestone rubble and also in the cracks of the stone paving in the gutter. How these plants got there and how they exist I do not

know, but there it is and flowering profusely too. This is a fine little plant and is very showy as it is a mass of lavender flowers. I was afraid that the Corporation employees might take it into their heads to clean out the gutter and so I dug up a few small plants and they look as if they will survive the shift!

(Extract of letter from Mr. A. R. R. Higginson, Port Augusta).

Field Naturalists' Section

— of the —

Royal Society of South Australia

(Incorporated)

RULES

(Amended May, and effective 1st July, 1953)

- | | |
|---|--------------------------------|
| <p>I. The title of the Section is the "Field Naturalists' Section of the Royal Society of South Australia Incorporated" (hereinafter called the Section).</p> | Title |
| <p>II. All the rules of the Section heretofore in force are hereby repealed.</p> | Repeal |
| <p>III. In the construction of the rules of the Section, unless the subject or context requires a different meaning, "prescribed" means prescribed by by-law. Words denoting the singular number only shall be deemed to include the plural and <i>vice versa</i>. Words denoting the masculine gender shall be deemed to include the feminine.</p> | Definitions |
| <p>IV. The objects of the Section are:—</p> <ol style="list-style-type: none"> (1) The promotion and diffusion of scientific knowledge by meetings for the reading and discussion of papers, by publications and by such other methods as the Committee may from time to time determine. (2) The preservation of the native flora and fauna of South Australia. (3) To afford lovers of nature and those interested in natural history the opportunity to observe and discuss the subjects in which they are interested by holding regular excursions to places of interest, and by the showing of films and the exhibition of specimens. | Objects |
| <p>V. (1) The Section shall be constituted of persons enrolled as members. Members shall be classed as honorary members, life members, country or corresponding members, ordinary members, associate members and junior members.</p> <p>(2) Members shall be persons elected to membership as prescribed by these rules. Life members shall be members who have compounded for their future annual subscriptions by payment of such sum as may from time to time be prescribed.</p> <p>(3) Honorary members shall be persons distinguished for their attainments in science, or who shall have rendered signal service to the Section.</p> <p>(4) Junior and associate members shall be entitled to all the privileges of members except that they may not debate or vote upon questions dealing with the management of the Section's business or affairs or the election of candidates but while associate members shall receive the publications of the Section free of charge junior members shall not.</p> <p>(5) Junior and associate members who wish to be elected to full membership shall follow the procedures laid out in Rule VI for the election of members.</p> | Constitution
and
Members |

VI. (1) Every candidate for membership shall be nominated on the prescribed form by two members.

Election of
Members

(2) The nomination form shall be lodged with the secretary and shall be submitted to the Committee at their next following meeting and the election shall be held at the next meeting of the Section thereafter.

(3) No person shall be eligible for election as an honorary member unless recommended by the Committee.

(4) Elections shall be by ballot or show of hands of those members present in person at the meeting; one negative in six or part thereof excluding.

(5) Every person elected shall be forthwith notified thereof by the secretary; the notification shall be accompanied by a copy of the rules and by-laws of the Section.

(6) Within one month of his election, a member shall be notified by the treasurer of the subscription due and upon payment of the amount shall be enrolled as a member of the Section.

VII. (1) The secretary and/or treasurer shall keep an official roll of the members of the Section.

Membership

(2) A member may tender his resignation from the Section at any time by notification in writing to the secretary who shall bring the matter to the Committee at its next following meeting. With the approval of the Committee he shall thereupon cease to be a member but shall not thereby be released from any indebtedness to the Section.

(3) The Committee may, at its discretion and upon such terms as it thinks fit, re-enrol any person who has ceased to be a member.

(4) If elected within three months before the end of the financial year a member, if he wishes, may defer taking up his membership until the following year.

VIII. (1) Subject to the control of the Section and the general meeting the management of the business affairs and funds of the Section and the custody of its property shall, subject to any by-laws for the time being regulating or prescribing conditions as to the same, be vested in a Committee, composed of a chairman, two vice-chairmen, treasurer, editor, assistant editor and/or magazine secretary, librarian, secretary and assistant secretary, all being members of the Section, and such other members as may be prescribed, who shall be elected and hold office for such periods as may be prescribed.

Management

(2) The Committee shall act by resolution of the majority of the Committee present at its meeting.

(3) The Section acknowledges the authority of the parent body and agrees to the conditions under which it may exist (Royal Society of S.A. (Inc.) By-law IX (1)-(10)).

IX. The Chairman, if present, shall preside at all meetings of the Committee or Section. In his absence, his duties shall be carried out by such other officer or member denoted or elected in the manner prescribed.

Chairman

X. (1) The financial year of the Section shall end on the last day of June in each year and the annual meeting shall be held in the month of July or in such other month and upon a date and at a place to be appointed by the Committee.

Meetings
of the
Section

(2) At the annual meeting the Committee shall submit a report and a duly audited financial statement, and the meeting shall elect the officers and members of the Committee to take the place of those who are due to retire and shall also transact any other business that may be permissible in accordance with the by-laws provided,

always, that officers and members of the Committee due to retire shall continue in office until their places have been effectively filled subject to their previous cesser of office or membership.

(3) The Committee may convene an ordinary meeting of the Section at any time.

(4) The Committee may at any time and shall upon the requisition in writing of at least seven financial members specifying the purpose for which the meeting is required, convene a special meeting of the Section. The special business for which the meeting has been convened and no other shall be transacted at such meeting. Seven members shall constitute a quorum.

XI. Two persons, not being officers or members of the Committee shall be elected at each annual meeting to audit the financial statement for the following year.

Auditors

XII. The Section may enter into affiliation with any organisation having similar objects to those of the Section but only if there is a two-third majority of a vote taken at an annual or special meeting held to consider such an application and if no objection is raised by the Council of the Royal Society of South Australia (Inc.).

Affiliation

XIII. The Committee may make, repeal, alter or vary any by-law not inconsistent with these rules for the effective carrying out of the objects and purposes of the Section, and such altered by-law(s) shall be ratified by members at the next following general meeting.

Alteration
of by-laws

XIV. The Section may, by a resolution approved by not less than two-thirds of the members voting at an annual meeting or at a special meeting duly convened for the purpose, repeal, alter, add to or vary any existing rule, and these rules will become operative only after approval by the Council of the Royal Society of South Australia (Inc.) (Royal Society By-law IX.(6)).

Alteration
of Rules

BY-LAWS.

I. Any person having an interest in the study of natural history and who is prepared to further the objects of the Section shall be eligible for nomination as a member.

Membership.

II. (1) The Committee shall consist of fifteen (15) members, viz., eight officers and seven other members. The officers may be a chairman, two vice-chairmen, a treasurer, an editor, assistant editor and/or magazine secretary, a librarian, a secretary, assistant secretary, the retiring chairman of the Section and President and Vice-Presidents of the Royal Society of S.A. *ex officio*. Any five members of the Committee present at a meeting shall constitute a quorum.

Committee.

(2) At each annual meeting all officers of the Committee shall retire but all retiring officers and members may be eligible for re-election. The senior vice-chairman shall retire each year, but is eligible for re-election.

(3) The vacancies on the Committee for the ensuing year shall be filled by election by those members present in person at the annual meeting. If so required by any two members the election shall be by ballot.

(4) Nominations for the position of office must be in the hands of the secretary seven days before the date of election, but the chairman will accept further nominations if those present decide this shall be done.

(5) The secretary shall keep a record of attendance of the members at all meetings of the Committee and present it at the annual meeting.

(6) If any member of the Committee who has received notice of the meeting absents himself from three consecutive meetings of

the Committee without its permission granted by resolution of the Committee before the expiration of such third meeting his position as a member of the Committee shall become vacant.

(7) Every casual vacancy in the Committee shall be filled at the next meeting of the Section (by ballot, if demanded by any two members). Such member of the Committee shall retire from the Committee at the end of the period when his predecessor would have retired.

(8) Committee meetings shall be held at least once in each month from February to November inclusive, and at such other times as the Committee or the chairman may decide.

(9) Authority to make public statements, either orally or in writing, on behalf of the Section shall be restricted to the chairman, vice-chairman and secretary of the Section and such other member or members as the Committee from time to time may authorize.

III. (1) Nomination for membership shall be submitted on the Section's "Application for Membership" form on which shall appear a summary of its objects and on which shall be entered the name and address of the nominee, the category of membership to which the application refers, reference to the particular branch (if any) of natural history in which the nominee is interested, and the signatures of the nominee, his proposer and his seconder; and in the case of a nomination as a junior and associate member in addition the nominee's age next birthday shall be stated.

Nomination

(2) Members of the Royal Society automatically become members of the Section upon payment of the Section's subscription.

(3) Honorary members, and country or corresponding members residing beyond a 25-mile radius of Adelaide shall be elected by the procedure as given in by-law III(1).

(4) Both the proposer and seconder of a nomination for membership shall be financial members of the Section.

IV. The annual subscription of a member shall be due and payable (a) immediately on election of, (b) on the first day in July in each year as the case may be. The rates are as follows:—

Annual
Subscription

	£	s.	d.
(i) Ordinary Members	10	0	
(ii) Country or Corresponding Members	5	0	
(iii) Associate Members, 18-21 years	5	0	
(iv) Junior Members, under 18 years	2	6	
(v) Life Member	7	7	0

V. (1) Each life member, ordinary member, associate member, country member, and honorary member of the Section shall be entitled to receive without extra charge one copy of each South Australian Naturalist published during the currency of his subscription.

S.A.
Naturalist

(2) A non-member of the Section on payment in advance of the sum of 9/- shall be forwarded, post free, one copy of each South Australian Naturalist published during the currency of his subscription. Posting shall be discontinued at the end of this term and not resumed until the subscription has been renewed.

(3) Four (4) numbers of the S.A. Naturalist shall comprise one volume.

(4) At the direction of the Committee the South Australian Naturalist shall be made available without charge to approved institutions, organisations and individuals if possible on an exchange basis.

(5) A record of the Exchange List and Free List shall be kept by the librarian. Such lists shall be reviewed at least biennially by

the Committee. Recommendations arising out of such review shall be considered at the June meeting of the Committee.

(6) The editor will be entitled to 12 copies of each number for distribution or any other purpose he sees fit providing his action furthers the aims of the Section.

VI. (1) A member who fails to pay or renew his annual subscription within three months of the due date may have his name removed from the South Australian Naturalist mailing list, and the treasurer shall report to the next Committee meeting the names of all members so removed.

Unfinancial
Members

(2) A member whose annual subscription is in arrear for more than twelve months shall be regarded as unfinancial and liable to have his name removed from the register of members and from the mailing list. The treasurer shall table a list of unfinancial members at the Committee meeting in June of each year.

(3) The Committee may delegate to the treasurer the task of issuing to members a formal reminder regarding overdue subscriptions. Failure to issue such a reminder shall not be a valid reason for non-payment by a member who is in arrear.

VII. Changes in time and places of any general meeting shall be announced either at a general meeting or by publication in the South Australian Naturalist or daily press or radio.

Meeting
Place

VIII. (1) The premises for the time being occupied by the Section and the property of the Section housed therein including the library shall be available for the use of members only at such times as such premises or property are available for an authorised meeting of the Section or of one of its clubs or when one or more officers of the Committee are in attendance or at such other times as may be authorised by the Committee.

Use of
Section's
Premises

(2) No property of the Section including library books and publications shall be removed from the Section's premises without the knowledge and approval of the librarian or other authorised person.

(3) The maximum period of retention of library books by borrowers without renewal shall be two months after which a fine of 2/- per month shall be payable to the librarian. The maximum period of any loan shall be six months.

(4) The librarian, upon approval of the Committee, may be entitled to spend up to five pounds (£5) in any one financial year on the purchase of books for the library providing that the expenditure of any one item shall not without the sanction of the Committee exceed two guineas (£2/2/-). Such purchases shall be approved at the next following Committee meeting following such purchases.

IX. (1) The contributor of a paper to the South Australian Naturalist shall be entitled to a maximum of three (3) free copies of the Journal which contains his contribution. Application for such copies shall be made to the librarian.

Papers

(2) Unless specifically authorised by the Committee, the Section shall not be responsible for the payment for reprints of any papers or articles contributed to the South Australian Naturalist.

(3) If the Committee decides not to publish a paper it shall be returned to the author.

(4) Unless the Committee otherwise permits all contributions intended for publication by the Section shall be typed (double spaced) on one side of the paper and be in accordance with the "Instructions to Authors" published in the Transactions of the Royal Society of South Australia (Inc.).

(5) The loan of any block used for the reproduction of illustrations in the South Australian Naturalist shall be on such conditions and at such fee as shall be fixed from time to time by the Committee. No block shall be loaned for publication without the approval of the owner of the copyright.

(6) A record of the receipt, despatch, use and disposal or loan of such blocks shall be kept by the editor and/or librarian.

X. (1) All cheques, pay-in slips and endorsements drawn by the treasurer shall be counter-signed by the chairman or secretary or any other person so authorised by the Committee.

Accounts

(2) Accounts for payment approved by the Committee shall be initialled by the chairman of the meeting at which they are approved.

(3) Out of pocket expenditure by any member of the Committee so authorised by the Committee to make such expenditure shall before reimbursement is authorised by the Committee submit a properly detailed statement of expenditure to the Committee for approval.

(4) The books and accounts of the Section's transactions shall be available on demand for inspection by a financial member of the Section only at a general meeting. The demand for inspection shall be signed by the member making a demand and counter-signed by two other financial members. Such demand shall be delivered to the secretary of the Section at least fourteen (14) days prior to the date of such meeting.

XI. (1) The library shall be supervised by the librarian. Subject to control by the Committee he shall be responsible for the issue of books to members, the receipt of publications, the distribution of the Section's publications and the general care and maintenance of the library.

Library

(2) The Committee may appoint an assistant librarian under such conditions and with such duties as the Committee may determine.

XII. (1) Unless the Committee decides otherwise meetings of the Section shall be held on the third Tuesday in each month from February to November inclusive at 8 p.m. in the Section's rooms, for the reading of papers dealing with natural history and related subjects more particularly of South Australia, exhibits of a like nature, etc.

Meetings of
Section

(2) In the absence of the Chairman, one of the vice-chairmen shall take the chair; and in the event of their absence the members present shall elect one of their number as chairman.

(3) At all meetings of the Section or Committee the chairman shall have both a deliberative and a casting vote.

(4) The business may be transacted in the following order, unless it be specially decided otherwise by the meeting:

- (a) reading and confirmation of the minutes of the previous general meeting;
- (b) business arising out of minutes;
- (c) election of members;
- (d) nomination of candidates for membership;
- (e) papers and discussions;
- (f) correspondence;
- (g) financial report;
- (h) editor's report;
- (i) report of excursions;
- (j) general business;
- (k) exhibits and specimens.

XIII. A member causing wilful damage to any property belonging to the Section or for which the Section is responsible shall incur such penalty as may be decided upon by the Committee. The Committee may require such damage to be made good in default of which recourse may be had to the process of Law and the offender may be suspended or expelled.

Protection
of Section's
Property

XIV. Any person, whether a member or not, participating in an official field excursion shall not wilfully destroy wild plants and flowers.

Nature
Protection

XV. (1) On the joint representation of not less than six financial members of the Section the Committee may authorise the formation of a Club or Study Group within the Section for the purpose of its members meeting periodically to pursue the study of a particular branch of natural history or to further any one of the objects for which the Section is established. The members of a Club shall be governed by the Rules of the Section and these By-laws insofar as they may apply.

Clubs

(2) Minutes of any meeting of a Club shall be kept by a secretary appointed for the purpose and such minutes shall be made available to the Committee on demand.

(3) The secretary of the Club shall submit an annual report to the Committee not later than the date of the general meeting of the Section immediately preceding the annual general meeting.

(4) All financial transactions of a Club shall be subject to the approval of the Committee.

(5) The Committee shall be informed of the names of the officers of a Club immediately following upon their election or appointment.

(6) The Committee may make available a meeting place for the members of a Club upon such conditions as it may think fit.

(7) A Club shall consist of members of the Section only.

XVI. The Committee may from time to time agree to the application for affiliation with the Section of any organisation, club, association or other body having objects similar to the Section. The Committee may bestow upon such affiliated body such rights and privileges of membership it thinks fit on the full understanding that such rights and privileges may be withdrawn at any time by the Committee.

Affiliation
Bodies

XVII. At the annual meeting the following reports shall be presented:

Annual
Meeting

(a) The Committee's report on the year's activities, by the secretary.

(b) Financial statement, duly audited by the auditors appointed at the previous annual meeting, by the treasurer.

(c) Librarian's report.

(d) Reports of Clubs.

Following acceptance by members at the annual meeting the first two above reports shall then be presented to the Royal Society Council on or before 15th September of each year.

XVIII. The Section as one of the participating and nominating bodies shall consider such nominations at the May meeting. Nominations for the Award duly seconded and with supporting statements and indicating that the nominee has agreed to his name going forward as the Section's nominee shall be in the secretary's hands not later than seven (7) days before the May meeting; and if more than one the nominee shall be selected and endorsed at the Committee's next succeeding monthly meeting.

Australian
Natural
History
Medallion

FIELD NATURALISTS' SECTION OF THE ROYAL SOCIETY OF SOUTH AUSTRALIA (INC).

LIST OF MEMBERS, MAY, 1953

Honorary:

Bellchambers, Mr. R. F., Humbug Scrub, S.A.
Cleland, Prof. J. B., Dashwood Road, Beaumont.
Fenner, Dr. Chas., 42 Alexandra Avenue, Rose Park
Fulton, Lt.-Col. D., Emu Flat, S.A.
Ising, Mr. E. H., Mt. Barker Road, Stirling West.
Symonds, Miss S. D. P., 21 Fairfax Avenue, Millswood Estate.
White, Capt. S. A., "Wee-tun-gar," Fulham.

Life:

Betts, Mrs. L. O., 16 South Terrace, Kensington Park.
Daley, Mrs. A. B., 29 Parade, Norwood.
Drzymalik, Miss A. E., 10a Wellington Square, North Adelaide
Dutton, Mrs. H. H., Anlaby Station, Kapunda
Elliott, Mrs. L. A., 1 Marden Road, Marden.
Engel, Mr. C. G. O., 38 Aroona Avenue, West Croydon.
Fryer, Mr. E. H., 21 Whyte Street, Somerton
Havard, Mr. F. J., 38 Hillview Road, Mitcham.
Lothian, Mr. T. R. N., Botanic Garden, Adelaide.
Page, Mrs. L. E., Wattle Flat, S.A.
Pattison, Mrs. Geo., 68 Partridge Street, Glenelg
Waite, Miss O. D., 23 Church Street, Norwood

Ordinary, Country or Corresponding, Associate and Junior:

Adcock, Mr. L. C., 7 Barnard Street, North Adelaide
Allen, Mrs. M. A., Box 1701M, G.P.O., Adelaide.
Anderson, Miss R., 30 Wattle Street, Fullarton Estate.
Angel, Mr. F. M., 34 Fullarton Road, Parkside.
Ashby, Miss A., Wittunga, Blackwood.
Axarlis, Mr. D. O., Box 1513M, G.P.O., Adelaide
Baack, Mrs. P., 60 King Street, Alberton
Barbour, Dr. C. S., 25 Marlborough Street, College Park
Barclay, Mrs. A., 11 Macpherson Road, Clapham
Barclay, Master John, 11 Macpherson Road, Clapham
Barlow, Mrs. E. V., 140 Grant Avenue, Toorak
Bartlett, Rev. H. K., 15 Claremont Avenue, Netherby
Bean, Mrs. C. M., 45 Godfrey Terrace, Leabrook
Beck, Mr. E. L., Poochera, West Coast
Beck, Mrs. E. L., Poochera, West Coast
Beckwith, Miss E., 16 First Avenue, Sefton Park
Beevor, Miss H. G., 20 Vauxhall Street, Erindale
Bennett, Mr. A. W., 28 Sussex Street, Glenelg
Black, Mrs. E. Couper, 379 Magill Road, Tranmere
Blizard, Mr. A. J., 22 Ellen Street, Semaphore
Blizard, Mr. W. L., 22 Ellen Street, Semaphore
Blundell, Miss M., c/o District Hospital, Captain's Flat, N.S.W.
Boehm, Mr. E. J., Sutherlands, S.A.
Bottrill, Mr. B. D. E., Hope Valley, S.A.
Bourne, Mr. M., 18 Church Street, Norwood.
Bowden, Mr. L. L., 11 Gurney Street, Edwardstown

- Bowden, Mrs. L. L., 11 Gurney Street, Edwardstown
Bowden, Miss S., 11 Gurney Street, Edwardstown
Brickmann, Mrs. A. E., 10 Verdale Avenue, Linden Park
Brooks, Miss E. M., 17 Gurney Road, Dulwich
Brown, Miss J., 16 Myall Avenue, Kensington Gardens
Buick, Mr. W. G., 311 Henley Beach Road, Brooklyn Park

Callanan, Mr. J., 20 Trinity Street, College Park
Carter, Mr. A. N., Box 2, "St. Ronan," 10 Berkley Street, Hawthorn, E.2, Victoria.
Caulfield, Mr. H., c/o. Botanic Gardens, Adelaide
Chamberlain, Mr. A. W., 22 Irving Road, S.E.2.
Cichon, Mr. R. S., Verdun, S.A.
Clark, Miss F., 43 Monmouth Road, Westbourne Park
Clement, Mr. R. A., Leigh Creek, S.A.
Colley, J. H. P., 16 Parker Avenue, Seaton.
Collins, Mrs. E., 24 Mawson Street, Nailsworth
Colvin, Miss Daphne, c/o. Girl Guides' Association, 138 Gawler Place
Cordon, Mrs. L., 15 Davies Terrace, Nailsworth
Cornelius, Master Brian, 48 Coorara Avenue, South Payneham
Cornell, Miss E. R., St. Andrews, Springfield
Cossey, Master Desmond, 3 Foote Avenue, Kilburn
Culver, Mrs. L. H., 13 Rutland Avenue, Brighton

Davis, Miss M., c/o. Botanic Gardens, Adelaide
Deland, Mr. E. C., 325 Payneham Road, Payneham
Denny, Mrs. M., 33 Shelley Street, Firlie
Dodd, Mrs. B. M., Honeysuckle Flat, Myponga
Drage, Master Kevin, 87 Port Road, Southwark
Drummond, Miss K., 45 Fisher Terrace, Mile End
Duncan, Miss G., 43 Aver Avenue, Colonel Light Gardens
Dunstone, Mr. K. W. T., 9 Constance Street, Cottonville
Durie, Dr. R. A., 44 Dee Street, Woodville South.
Dwight, Mr. H. T., c/o. Botanic Gardens, Adelaide

Eardley, Miss C. M., 68 Wattle Street, Fullarton Estate
Edquist, Mr. A. G., 19 Farrell Street, New Glenelg
Eland, Miss M., 29 Lily Street, Goodwood Park

Farsch, Mr. J., c/o. Caldwell's Wines, Ltd., P.O. Box 29, Camperdown, N.S.W.
Filsell, Mrs. P., "Myrtle Bank," Williamstown
Finch, Mr. B. H., 29 French Street, Galway Estate, Mitcham
Ford, Mr. N. A., 4 East Parkway, Reade Park
Franklin, Master Ian, 16 Kandahar Crescent, Colonel Light Gardens
French, Mr. I., Catherine Street, Strathalbyn

Gale, Mr. A. E., 12 Mawson Street, Prospect Gardens.
Gale, Mr. C., 391 Carrington Street, Adelaide
Gallasch, Miss T. E., 14 Fashoda Street, Unley
Glasscoe, Miss G. D., "Huntleigh," Daisy Avenue, Ascot Park
Glover, Mr. B., 62 Seafield Avenue, Kingswood
Godfrey, Miss C. M., Henley Beach Road, Fulham
Godfrey, Mr. F. K., Box 951H, G.P.O., Adelaide.
Goldsack, Mr. H., Coromandel Valley, S.A.
Gore, Mrs. H. E., Summertown, S.A.
Gratton, Master Louis, 15 Russell Terrace, Woodville South
Gratton, Mrs. M. F., 15 Russell Terrace, Woodville South
Gray, Mr. F., 14 Hanson Street, Adelaide
Gray, Mr. R. G., Flinders Nursery, Augusta Terrace, Port Augusta
Gray, Mr. W. S., Halidon, S.A.
Green, Mrs. G., Kulka, Millicent
Green, Miss P., St. Ann's College, Brougham Place, North Adelaide
Gregor, Miss G. L., 86 Kintore Avenue, Prospect
Grix, Mrs., 22 Minn Street, Seaton Park
Gunter, Mr. D. J., 16 Coglein Street, Adelaide

- Hamilton, Mrs. H. M., Box 5, Cleve, S.A.
Hamilton, Mrs. I. D., 113 Edward Street, Norwood
Hancock, Mrs. A. W., Modbury, S.A.
Hardacre, Master Brian, 8 Garland Street, Glandore
Harrington, Mr. K. H., 349 Marion Road, Plympton
Harrison, Mr. N. C., 5 Minney Street, Broadview
Harrison, Mrs. N. C., 5 Minney Street, Broadview
Harrison, Miss Dorothy, 5 Minney Street, Broadview
Harrison, Master Graham, 5 Minney Street, Broadview
Harrison, Mr. P. M., 70 Addison Road, Rosewater Gardens
Harrison, Mrs. P. M., 70 Addison Road, Rosewater Gardens
Harry, Mr. A., 8 Fife Street, North Walkerville
Harry, Mrs., 8 Fife Street, North Walkerville
Hartley, Mrs. T. J., 651 Port Road, Kilkenny
Hazel, Mr. Geo., Hawkers Creek, Kapunda
Heathcote, Mrs. G. M., Maple Avenue, Home Park, Magill
Hedenstrom, Mr. B., Waterfall Gully Road, Burnside
Hergstrom, Mr. E. H., Bridgewater
Hergstrom, Mrs. E. H., Bridgewater
Heritage, Miss E., 40 Avenue Street, Frewville
Heron, Miss M., 36 Marlborough Street, Malvern
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Higginson, Mr. A. R., Box 114, Port Augusta
Hill, Mr. H. L., "Koorianda," 27 Vine Street, Prospect
Hill, Mr. R., 7 Murray Street, Hove
Holesgrove, Mr. W. A., Sheoak Road, Belair
Holesgrove, Mrs. W. A., Sheoak Road, Belair
Hood, Mr. J. B., Private Mail Bag 26, Joanna, via Naracoorte
Horder, Mrs. L. E., Stirling East
Houston, Miss M. H., 156 East Terrace, Henley Beach
Hudd, Lady, Pier Street, Glenelg
Hughes, Miss L., 25 Russell Terrace, Woodville
Humble, Mr. D. S. W., 64 Payneham Road, Payneham
Ifould, Mr. P., "Kurralta," 14 Wyatts Road, Burnside
Jackson, Miss K., c/o. Dalgety's, Currie Street, Adelaide
Jeakings, Mr. W. G., 119 Leinster Road, Christchurch, N.Z.
Johnson, Mr. T. V., 50 Park Road, Kensington Park
Johnstone, Miss M., "Pine Hill," via Wollesley, S.A.
Jonas, Mr. O., 2 Pembroke Place, Colonel Light Gardens
Jordan, Mr. R., William Street, Norwood
Kalatzis, Mr. D. A., c/o. Botanic Gardens, Adelaide
Kelsey, Mrs. M. O., c/o. Giles Magarey & Lloyd, 40 Pirie Street, Adelaide
Kelsh, Mrs. O. J., 26 Kyre Avenue, Kingswood
Kempson, Miss J., 9 Gertrude Street, Glandore
Kennedy, Mrs. O., 182 Jeffcott Street, North Adelaide
Kennett, Mrs. R. M., 46 O.G. Road, Klemzig
Kentish, Miss R., 694 Port Road, Beverley
Kimber, Miss R., Yeelanna, West Coast
Kinnear, Miss H., 35 Netherby Avenue, Netherby
Korner, Mrs. C. M., 38 Brooker Terrace, Richmond
Krachenbuehl, Mr. D., 23 Angus Street, Goodwood Park
Kumnick, Mr. D., Lenswood, S.A.
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Leask, Mr. R., 107 George Street, Thebarton
Leditschke, Miss J., 9 South Terrace, Adelaide
Leditschke, Mr. J. F., 9 South Terrace, Adelaide
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Limbert, Miss L. F., 35 Austral Terrace, Malvern
Lomman, Miss Y., 17 Richmond Road, Westbourne Park
Lower, Mr. M. A., 7 Playford Street, Glen Osmond
Lyons, Mrs. J. A., 17 St. Andrew's Street, North Walkerville

- McCartney, Dr. J. E., Inst. of Med. and Vet. Science, Frome Road, Adelaide.
McDonald, Mrs. W., 150 New Street, Queenstown.
McDougall, Mr. H. V., Nyabing, W.A.
McEntee, Mr. C. M. Maitland, S.A.
McNab, Miss M. D., 1a The Avenue, Medindie, S.A.
Machin, Mrs. J., 117 Allinga Avenue, Glenunga
Mann, Miss E. C., 4 St. Andrew's Street, North Walkerville
Martin, Miss A., 5 Henry Street, Croydon.
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Pearce, Mr. A. S., Maitland, S.A.
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Peterson, Mrs. I., 29 Paxton Street, Semaphore
Powell, Mrs. S., 14 Coles Street, Brayville, via Plympton
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Pritchard, Mrs. E. W., 31 Yeronga Avenue, Kensington Park
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Shelton, Master John, 38 Wootoona Terrace, St. Georges
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Snowden, Mr. F., 17 Oleander Street, Brighton
Snowden, Miss Janette, 17 Oleander Street, Brighton
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Standen, Mr. W. F., 9 Edgeworth Street, Prospect Park
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Stockham, Miss H. M., 12 Kyre Avenue, Kingswood
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Tilmouth, Mrs. R., 108a William Street, Norwood
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Wicks, Mrs. L. J., Highbury East
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Worthley, Miss S. E., 92 Woodville Road, Woodville
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THE FIELD NATURALISTS' SECTION

EXCURSIONS :

1953.

June

- 6—Henley Beach. Subject: Seaweeds. First tram after 1 p.m. to terminus
 21—(Sunday)—National Park. 10.45 a.m. train to National Park Station,
 thence to the North-East corner.

July

- 4—Sturt Gorge. Subject: Geology of a Glacial Age. Leader: Mr. Molineux. Train to Eden Hills Station leaves Adelaide 1.15 p.m.
 19—(Sunday)—Paracomb and Inglewood areas. Leader: Mr. Schirmer. Bowmans bus at Victoria Square East at 10.30 a.m.

August

- 1—Grange North.
 16—(Sunday)—Bridgewater to Crafers. 10.45 a.m. train to Bridgewater.
 N.B.—Suggestions for the 1953-54 Excursion Programme will be welcomed by the Committee.

MONTHLY GENERAL
MEETINGS:

- June 16—Subject: Coloured Films.
 July 21—Annual Meeting of the Section.
 Aug. 18—Lecturettes by Members.

COMMITTEE MEETINGS :

June 8
 July 14
 August 11

CONCHOLOGICAL SOCIETY:

- June 17—Subject: Genotypes of South Australian genera.
 July 15—Subject: South Australian Tertiary fossils.
 Aug. 19—Subject: Members' Exhibits.

BOTANY CLUB STUDY
CIRCLE :

- June 13—Meet in Museum at 2 p.m.
 June 22—Sapindaceae and Rhamnaceae.
 July 11—Meet in Museum at 2 p.m.
 July 27—Study. Sterculiaceae and Dilleniaceae.
 Aug. 24—Study Circle. Violaceae and Thymelaeaceae.

Special Meeting, 9th June,
 Society Rooms

Dr. L. E. Richdale, N.Z. ornithologist, will speak on matters of general interest. Members are invited.